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10/824,611

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EXAMINER

KANGARLOO, RAMTIN

ART UNIT

PAPER NUMBER

2619

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/824,611 | Applicant(s) OUYANG ET AL. | |
| | Examiner RAMTIN KANGARLOO | Art Unit 2619 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/31/2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on January 31, 2008 has been entered. Claims 1 -21 are still pending in this application, with claim 1, 13, 16 and 19 being independent.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson (US Patent No 6263048) in view of Li et al. (U.S. Patent No. 7149190).

Regarding **Claim 1**, Nelson disclose a method for dynamic bin allocation, the method comprising: obtaining link performance data based on a plurality of test transmissions between two network elements (See col. 1, Lines 9-16 and Fig. 3, transmissions between network), Nelson does not specifically disclose wherein the plurality of test transmissions utilize each of a plurality of transmission modes in each of a plurality of frequency ranges; determining a desired transmission scheme, wherein each of the plurality of frequency ranges is designated for one of the transmission modes based at least in part on the link performance data; and assigning the desired transmission scheme to a connection between the two network elements. Li teaches

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wherein the plurality of test transmissions utilize each of a plurality of transmission modes in each of a plurality of frequency ranges (See Fig 4B first and second transmissions, and Col.4 lines 3-7 and col3. lines 21-26); determining a desired transmission scheme, wherein each of the plurality of frequency ranges is designated for one of the transmission modes based at least in part on the link performance data (See col.4 lines 32-37 and col. 3, lines 21-26); and assigning the desired transmission scheme to a connection between the two network elements (See col.2, lines 6-10). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to mount plurality of transmission modes taught by Li onto the bin allocation as show in Nelson for transmissions between two networks in order to improve quality of service and reducing processing speed.

Regarding **Claim 2**, Nelson and Li disclose all of the limitation as applied to claim

1. further Nelson discloses the link performance data are obtained for each of the plurality of frequency ranges (See col. 12, Lines 18-22); and the desired transmission scheme is determined by identifying a desired transmission mode for each of the plurality of frequency ranges based at least in part on the link performance data (See col. 12, Lines 18-33).

Regarding **Claim 3**, Nelson and Li disclose all of the limitation as applied to claim

1. further Nelson discloses the test transmissions are based on the at least one transmission mode (See col. 12, Lines 46-47 and Lines 18-33).

Regarding **Claim 4**, Nelson and Li disclose all of the limitation as applied to claim 1. further Nelson discloses the link performance data are obtained for each of a plurality of predetermined transmission schemes (See col. 2, Lines 32-34); and the desired transmission scheme is selected from the plurality of predetermined transmission schemes based at least in part on the link performance data (See col. 2, Lines 32-46).

Regarding **Claim 5**, Nelson and Li disclose all of the limitation as applied to claim 1 and 4. Further Nelson discloses the test transmissions are based on the plurality of predetermined transmission schemes (See col. 6, Lines 44-52).

Regarding **Claim 6**, Nelson and Li disclose all of the limitation as applied to claim 1. Further Nelson discloses communicating the desired transmission scheme to at least one of the two network elements and continue communications between the two network elements based on the desired transmission scheme (See col. 2, Lines 37-40).

Regarding **Claim 7**, Nelson and Li disclose all of the limitation as applied to claim 1. Further Nelson discloses the plurality of frequency ranges are defined based on a discrete multi-tone (DMT) modulation (See col. 6, Lines 26-29 and Col.7 Lines 34-38).

Regarding **Claim 8**, Nelson and Li disclose all of the limitation as applied to claim

1. Further Nelson discloses the plurality of frequency ranges are defined based on an orthogonal frequency division multiplexing (OFDM) technology (See col. 6, Lines 37-41 and Col.7 Lines 34-38).

Regarding **Claim 9**, Nelson and Li disclose all of the limitation as applied to claim

1. Further Nelson discloses the link performance data comprise at least one of: a data rate; an error rate (See col. 2, Lines 63-64); a signal-to-interference ratio (See col. 2, Lines 56-57); and a signal-to-noise ratio (See col. 1, Lines 53-57 and Lines 62-65).

Regarding **Claim 10**, Nelson and Li disclose all of the limitation as applied to

claim 1. Further Nelson discloses at least one-transmission modes comprises at least one of: a full duplex mode (See col. 8, Lines 34-35); an upstream-only mode; and a downstream-only mode (See col. 8, Lines 34-35 and Col. 2, Lines 37-39).

Regarding **Claim 11**, Nelson and Li disclose all of the limitation as applied to

claim 1. Further Nelson discloses test transmissions are performed at a maximum transmission power for each of the plurality of frequency ranges (See col. 7, Lines 34-38).

Regarding **Claim 12**, Nelson and Li disclose all of the limitation as applied to claim 1. Further Nelson discloses two network elements communicate over a digital subscriber line (DSL) (See col. 7, Lines 34-38).

Regarding **Claim 13**, Nelson disclose a system for dynamic bin allocation, the system comprising a first network element and a second network element, wherein each of the first network element and the second network element comprises at least a processor module (See col. 7, Lines 49-50 and Pc analysis 65, See Fig. 5) and a transceiver module (See col. 6, Lines 44-52) that are coordinated to obtain link performance data based on a plurality of test transmissions between the first network element and the second network element (See col. 1, Lines 9-16 and Fig. 3), Nelson does not specifically disclose wherein the plurality of test transmissions utilize each of a plurality of transmission modes in each of a plurality of frequency ranges; determine a desired transmission scheme, wherein each of the plurality of frequency ranges is designated for one of the transmission modes based at least in part on the link performance data; and assign the desired transmission scheme to a connection between the two network elements . Li teaches wherein the plurality of test transmissions utilize each of a plurality of transmission modes in each of a plurality of frequency ranges (See Fig 4B, and Col.4 lines 3-7 and col3. lines 21-26); determine a desired transmission scheme, wherein each of the plurality of frequency ranges is designated for one of the transmission modes based at least in part on the link performance data(See col.4 lines 32-37 and col. 3, lines 21-26); and assign the desired

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transmission scheme to a connection between the two network elements (See col.2, lines 6-10).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to mount plurality of transmission modes taught by Li onto the bin allocation as show in Nelson in order to improve quality of service and reducing processing speed.

Regarding **Claim 14**, Nelson and Li disclose all of the limitation as applied to claim 13. Further Nelson discloses link performance data are obtained for each of the plurality of frequency ranges (See col. 12, Lines 18-22); and the desired transmission scheme is determined by identifying a desired transmission mode for each of the plurality of frequency ranges based at least in part on the link performance data (See col. 12, Lines 18-33).

Regarding **Claim 15**, Nelson and Li disclose all of the limitation as applied to claim 13. Further Nelson discloses link performance data are obtained for each of a plurality of predetermined transmission schemes (See col. 2, Lines 32-34); and the desired transmission scheme is selected from the plurality of predetermined transmission schemes based at least in part on the link performance data (See col. 2, Lines 32-46).

Regarding **Claim 16**, Nelson disclose a system for dynamic bin allocation, the system comprising: means for obtaining link performance data based on a plurality of test transmissions between two network elements (See col. 1, Lines 9-16 and Fig. 3), Nelson does not specifically disclose wherein the plurality of test transmissions utilize each of a plurality of transmission modes in each of a plurality of frequency ranges and; means for determining a desired transmission scheme, wherein each of the plurality of frequency ranges is designated for one of the transmission modes based at least in part on the link performance data and means for assigning the desired transmission scheme to a connection between the two network elements. Li teaches wherein the plurality of test transmissions utilize each of a plurality of transmission modes in each of a plurality of frequency ranges and (See Fig 4B, and Col.4 lines 3-7 and col3. lines 21-26); means for determining a desired transmission scheme, wherein each of the plurality of frequency ranges is designated for one of the transmission modes based at least in part on the link performance data (See col.4 lines 32-37 and col. 3, lines 21-26); and means for assigning the desired transmission scheme to a connection between the two network elements (See col.2, lines 6-10).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to mount plurality of transmission modes taught by Li onto the bin allocation as show in Nelson in order to transmissions between two network So that the system run quicker.

Regarding **Claim 17**, Nelson and Li disclose all of the limitation as applied to claim 16. Further Nelson discloses wherein the link performance data are obtained for each of the plurality of frequency ranges (See col. 12, Lines 18-22); and the desired transmission scheme is determined by identifying a desired transmission mode for each of the plurality of frequency ranges based at least in part on the link performance data (See col. 12, Lines 18-33).

Regarding **Claim 18**, Nelson and Li disclose all of the limitation as applied to claim 16. Further Nelson discloses the link performance data are obtained for each of a plurality of predetermined transmission schemes; and the desired transmission scheme is selected from the plurality of predetermined transmission schemes based at least in part on the link performance data (See col. 2, Lines 32-46).

Regarding **Claim 19**, Nelson disclose a computer readable medium having code for causing a processor to perform dynamic bin allocation, the computer readable medium comprising: code adapted to obtain link performance data based on a plurality of test transmissions between the first network element and the second network element (See col. 1, Lines 9-16 and Fig. 3), Nelson does not specifically disclose wherein the plurality of test transmissions utilize each of a plurality of transmission modes in each of a plurality of frequency ranges; and code adapted to determine a desired transmission scheme, wherein each of the plurality of frequency ranges is designated for one of the transmission modes based at least in part on the link

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performance data; and code adapted to assign the desired transmission scheme to a connection between the two network elements. Li teaches wherein the plurality of test transmissions utilize each of a plurality of transmission modes in each of a plurality of frequency ranges(See Fig 4B, and Col.4 lines 3-7 and col3. lines 21-26); and code adapted to determine a desired transmission scheme, wherein each of the plurality of frequency ranges is designated for one of the transmission modes based at least in part on the link performance data(See col.4 lines 32-37 and col. 3, lines 21-26) ; and code adapted to assign the desired transmission scheme to a connection between the two network elements (See col.2, lines 6-10 and col. 2, lines 53-59).

Nelson and Li teach all the limitation in claims 1, 13, and 16. In addition, Nelson teaches Microcontroller 104. It is obvious that microcontroller run a computer program. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to mount plurality of transmission modes taught by Li onto the bin allocation as show in Nelson in order to improve quality of service and reducing processing speed.

Regarding **Claim 20**, Nelson and Li disclose all of the limitation as applied to claim 19. Further Nelson discloses the link performance data are obtained for each of the plurality of frequency ranges (See col. 12, Lines 18-22); and the desired transmission scheme is determined by identifying a desired transmission mode for each of the plurality of frequency ranges based at least in part on the link performance data (See col. 12, Lines 18-33 and col. 7, Lines 53-63).

Nelson teaches all the limitation in claims 20. In addition, Nelson teaches Microcontroller 104. It is inherent that microcontroller run a computer program

Regarding **Claim 21**, Nelson and Li disclose all of the limitation as applied to claim 19. Further Nelson discloses link performance data are obtained for each of a plurality of predetermined transmission schemes (See col. 2, Lines 32-34); and the desired transmission scheme is selected from the plurality of predetermined transmission schemes based at least in part on the link performance data (See col. 2, Lines 32-46 and col. 7, Lines 53-63).

Nelson teaches all the limitation in claims 20. In addition, Nelson teaches Microcontroller 104. It is inherent that microcontroller run a computer program

Response to Arguments

4. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

5. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH

shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAMTIN KANGARLOO whose telephone number is (571)270-3452. The examiner can normally be reached on Mon to Fri 8 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chirag Shah can be reached on (571) 272- 3144. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RAMTIN KANGARLOO/

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Examiner, Art Unit 2619

April 8, 2008

/Chirag G Shah/

Supervisory Patent Examiner, Art Unit 2619